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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEWIS, RALPH A

ART UNIT	PAPER NUMBER
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3732

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/624,963

Applicant(s)

RIZOIU ET AL.

Examiner

Ralph A. Lewis

Art Unit

3732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 104-112, 114-133, 135-157, 159-186, 191-194, 199-202 and 207-307 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 135, 159, 214 and 216 is/are allowed.
- 6) ☒ Claim(s) 104, 108-112, 116-133, 136-157, 160-186, 191-194, 199-202, 207-211, 213, 215, 217-241 and 243-307 is/are rejected.
- 7) ☒ Claim(s) 105-107, 114, 115, 212 and 242 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Status Identifiers Improper

37 CFR 1.121 requires the use of one of the following claim status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).

There is no provision for applicant's "(Previously Cancelled)," "(Previously Amended)," and "(Previously Added)." Continued use of improper status identifiers leads to confusion amongst clerks, practitioners and the printers and will be held to be non-responsive.

Objections to the Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The specification provides no apparent basis for the "spanning" limitations of claims 112 and 120, the monochromatic LEDs of claims 130, 141, 154, 165, 178, 261, 275, 291 and 307, or the "incident light" limitations of claims 276-291. The claims must be supported by the specification.

New Matter Rejections based on 35 U.S.C. 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 112, 120, 130, 141, 154, 165, 178, 261, 275-291 and 307 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In regard to claims 112 and 120, it is unclear what applicant is attempting to require with the new "spanning" limitation as the specification provides no support or guidance in interpreting the terminology. Regardless, the limitation constitutes new matter.

In regard to claims 130, 141, 154, 165, 178, 261, 275, 291 and 307, in the previous office action the examiner pointed out that applicant's specification (page 5, lines 6 and 7) only provided support for the light emitting diode to emit polychromatic light and that the claims directed to monochromatic light appeared to be in error and indefinite because they were contradicted by the specification. In response applicants assert that it was their intention to claim that the LED's emitted monochromatic light, added additional claims with the limitation and argued that it is well known. Perhaps it is well known that some LED's are capable of emitting monochromatic light, however, applicant's originally filed specification provides no support for such claims. Applicants simply cannot add alleged prior art elements to their invention after the patent application has been filed. The limitations that the monochromatic light is produced by LED's is new matter.

In regard to claims 276-291, there appears to be absolutely no basis in the originally filed specification for the "transmits incident electromagnetic radiation" of claim 276 or the "only to incident electromagnetic radiation" limitation of claim 277. Applicants simply cannot make things up to add to the claims after the application has been filed. The limitation constitutes new matter.

Rejections based on 35 U.S.C. 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 112, 120, 130, 141, 146, 165, 178, 261, 275, 291 and 307 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 112 and 120 it is unclear what applicant intends with the undefined "spanning" limitation or how that is any different from the range set forth in the parent claims.

In claims 130, 141, 154, 165, 178, 261, 275, 291 and 307, according to the specification LED's produce polychromatic light (page 5, lines 6 and 7), not monochromatic light as claimed. The present claims contradict the specification.

In claim 146, lines 11 and 12, the "comprising a light emitting diode or other source of electromagnetic radiation" is confusing since an LED is a "source of electromagnetic radiation." The limitations are redundant and confusing.

Rejections based on Prior Art

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 121, 125, 128, 129, 131, 133, 136, 139, 140, 142, 144, 146, 150, 152, 153, 155, 157, 160, 163, 164, 166, 168, 170, 171, 176, 177, 179, 181, 191, 192, 199, 200, 207, 208, 213, 215, 217, 222, 223, 226, 227, 230, 231, 234, 235, 238-240, 243, 245, 246, 250, 251, 253, 254, 260, 263, 264, 274, 276, 278-281, 284, 285, 290, 292, 293, 294, 296-298, 301 and 306 are rejected under 35 U.S.C. 102(b) as being anticipated by Levy (US 5,306,143).

Levy discloses a toothbrush 4 having a cleaning surface 8 and a source on monochromatic electromagnetic radiation 16 (laser) that operates in the infrared range (see column 4, line 8)(i.e. substantially free of ultraviolet radiation). The Levy tooth brush is used with a dentifrice which may contain a “product which reacts with bacteria tarter or calculus in such a manner that radiation of an appropriate wave length will have the effect of removing the bacteria, tarter or calculus . . .” (column 3, line 65- column 4, line 5). In regard to claim 133, the Levy dentifrice gel (column 3, line 48) is inherently

clear enough to pass light or it would not work. In regard to claim 213, the removal of tarter and calculus from a patient's teeth has a whitening effect.

In response to the present rejection applicant repeats the limitations found in the present claims and declares without explanation that the Levy reference does not have those elements. In response the examiner notes that the Levy laser operating in the infrared range most certainly does not emit light in the ultraviolet range. The above noted product which reacts with bacteria, tarter or calculus so that when radiation of the appropriate wave length is applied the bacteria, tarter or calculus is removed clearly meets the "reactive to at least one wavelength", otherwise, it would not function to remove the bacteria, tarter and calculus as stated by Levy. Perhaps the reaction is not as applicant envisions, nevertheless, there is a reaction of the product agent to the electromagnetic radiation.

Claims 104, 108, 109, 111, 112, 116, 117, 119-121, 125-131, 133, 136-142, 144, 146, 150-155, 157, 160-166, 168, 170-179, 181, 183, 184, 191, 192, 199, 200, 207, 208, 211, 213, 215, 217-219, 222, 223, 226, 227, 230, 231, 234, 235, 238-240, 243, 245, 246, 248-251, 253, 254, 257, 258, 259, 263, 264, 266, 270-272, 276-281, 284, 285, 287-289, 292-294, 296-298 and 301-305, are rejected under 35 U.S.C. 102(a) as being anticipated by Polaert et al (WO 97/01298).

Relying on US Patent 5,894,620 as a translation of WO/97/01298, Polaret et al disclose a toothbrush with bristles having a source of polychromatic electromagnetic radiation 1 that emits light in the range of approximately 400-500 nanometers (column 3, line 48) (it is noted that LED's generally emit polychromatic light over a band of

Art Unit: 3732

frequencies). The Polaert et al toothbrush is used with a dental gel containing a photosensitive agent (fluorescent substance) that is applied while brushing (note column 5, lines 45-46). In regard to the "transparency sufficient to transmit the electromagnetic radiation", the examiner takes the position that the limitation is inherent in the described operation of the Polaert et al device/system. It would be necessary for the paste or gel of Polaert et al device/system to have some degree of transparency for the light to react with the fluorescent material within the paste or gel. If the paste or gel was opaque then light would not be able to react with the fluorescent material contained within the paste or gel. In regard to the "anticaries" and "whitening compound" limitations the Polaert et al fluorescent material detects dental plaque which helps the user to remove the plaque thereby helping to prevent caries and making the teeth whiter. In regard to claims 128 and 130, Polaert et al disclose an embodiment Figure 2 where a filter 5a is used to make the light monochromatic.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 111, 119, 121, 125-131, 133, 136-142, 144, 146, 150-155, 157, 160-166, 168, 178, 181, 184-186, 191-194, 199-202, 208-210, 213, 215, 218-230, 232, 233, 241,

243-247, 250-254, 257-262, 265-267, 273, 274, 275, 278, 279, 281-284, 290, 291, 295, 296-301, 306 and 307 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al (WO 97/01298).

In regard to the “transparency sufficient to transmit the electromagnetic radiation” limitations, to the extent that the Polaert et al tooth paste/gel is not inherently of such sufficient transparency, one of ordinary skill in the art would have readily recognized that the Polaert et al tooth paste/gel should be of at least such sufficient transparency so that the device/system could operate as described by Polaert et al. In regard to “clear” limitations and to the extent that the Polaert et al dentifrice is not “clear,” the maximizing of the efficiency of the light delivery to the photo chemical treating products by making the paste/gel clear would have been obvious to one of ordinary skill in the art. Moreover, it is noted at the bottom of page 11 of applicant’s specification, that applicant admits clear dentifrices are old and well known in the prior art.

In regard to claims 130, 141, 154, 165, 178, 261, 275, 291 and 307, applicant admits on the record that monochromatic LED’s are well known in the art. Consequently that ordinarily skilled artisan would have found the use of such for the Polaert et al LEDs to have been obvious as a matter of routine.

In regard to claims 185, 193, 201, 209, 241, 265, 283, 295 the use of well known fluoride in dental compositions in order to help prevent tooth decay is old and well known, to have added the common substance to the Polaert et al tooth paste/gel would have been obvious to the ordinarily skilled artisan in order to prevent tooth decay.

In regard to claims 244, 247, 262, 267, 273, 282, and 299, applicant admits at the bottom of page 11 that it is old and well known in the art to make dental abrasives clear. To have merely used the prior art clear abrasives with the Polaert et al dentifrice as is known in the art would have been obvious to one of ordinary skill in the art in light of applicant's admission.

Claims 110, 118, 132, 143, 156, 167, 180 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al (WO 97/01298) in view of Feldman (US 5,160,194).

Feldman for a similar lighted tooth brush teaches directing the light around the bristles rather than through the bristles. To have merely provided the Polaert et al light around the bristles as taught in the prior art to be an alternative through the bristles would have been obvious to one of ordinary skill in the art.

Claims 122-124, 145, 147-149, 169, 182, 213 and 215, 236, 237, 238, 255, 256, 268, 269, and 286 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levy (US 5,306,143) in view of Yarborough (US 5,645,428) and Cipolla (US 5,879,159).

Levy discloses the use of a light conducting toothbrush 5 with photosensitive chemicals contained in a special toothpaste or gel (column 3, line 48) for treating bacteria, tarter, calculus (column 3, line 65 to column 4, line 4). Levy fails to teach the use of a peroxide whitener. Yarborough (column 3, lines 14-26) and Cipolla (column 8, lines 22-37), however, both teach that teeth may be whitened by applying a

Art Unit: 3732

photosensitive material (hydrogen peroxide) to a person's teeth and then activating it with light. To have selected hydrogen peroxide as the photosensitive chemical in Levy so that the Levy device may be used for whitening a person's teeth as taught by Yarborough and Cipolla would have been obvious to one of ordinary skill in the art.

Allowable Subject Matter

Claim 104 (NOT ALLOWED) calling for polychromatic radiation between the wavelengths of 300-750 nanometers is interpreted as distinguishing the claimed the device from references calling for a laser as a source of electromagnetic radiation (e.g. 5,658,148 and 5,306,143) since lasers (and laser diodes) produce monochromatic light at a single wavelength. The limitation is also considered distinguishing from incandescent filament light bulb toothbrushes (e.g. 5,813,855 and 5,160,194) as such incandescent bulbs typically produce a significant amount of radiation in the infrared range above the limited range of 750 nanometers (note for example Gonser et al 5,003,434 Figure 7 - tungsten filament light source).

The prior art fails to disclose nor fairly teach a system comprised of a tooth brush that directs polychromatic light within a specified range of wavelengths (as in claim 104) plus a dentifrice that includes a whitening agent (hydrogen peroxide) or photosensitive salt compound that reacts to the specified range of light dispensed by the toothbrush as is specifically set forth in the following claims.

Accordingly, claims 105-107, 114, 115, and 212, would be allowable if rewritten in independent form to include all of the limitations of the claims from which they depend. Claims 135, 159, 214 and 216 are allowed.

Action Made Final

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

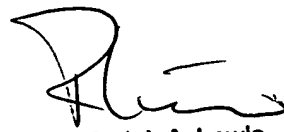
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 3732

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication should be directed to **Ralph Lewis** at telephone number **(571) 272-4712**. Fax (571) 273-4712. The examiner works a compressed work schedule and is unavailable every other Friday. The examiner's supervisor, Kevin Shaver, can be reached at (571) 272-4720.

R.Lewis
June 10, 2006



Ralph A. Lewis
Primary Examiner
Au3732